ANTIBIOTIC USE IN AQUACULTURE IN VIETNAM

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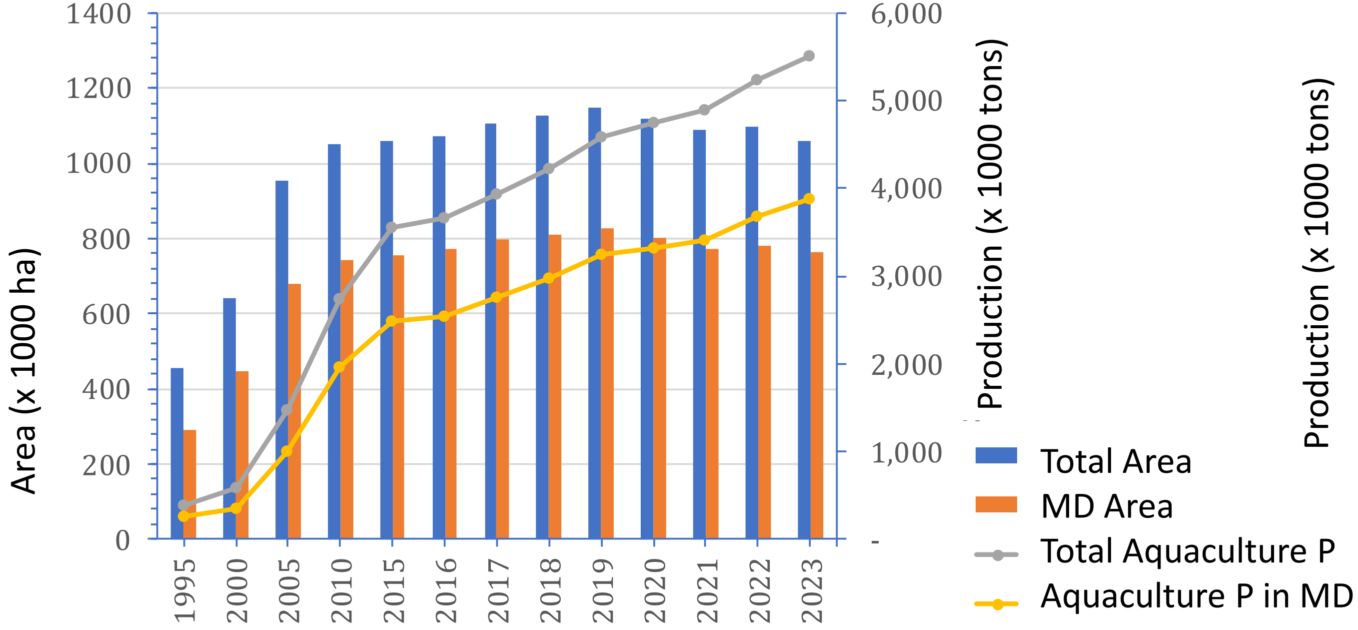
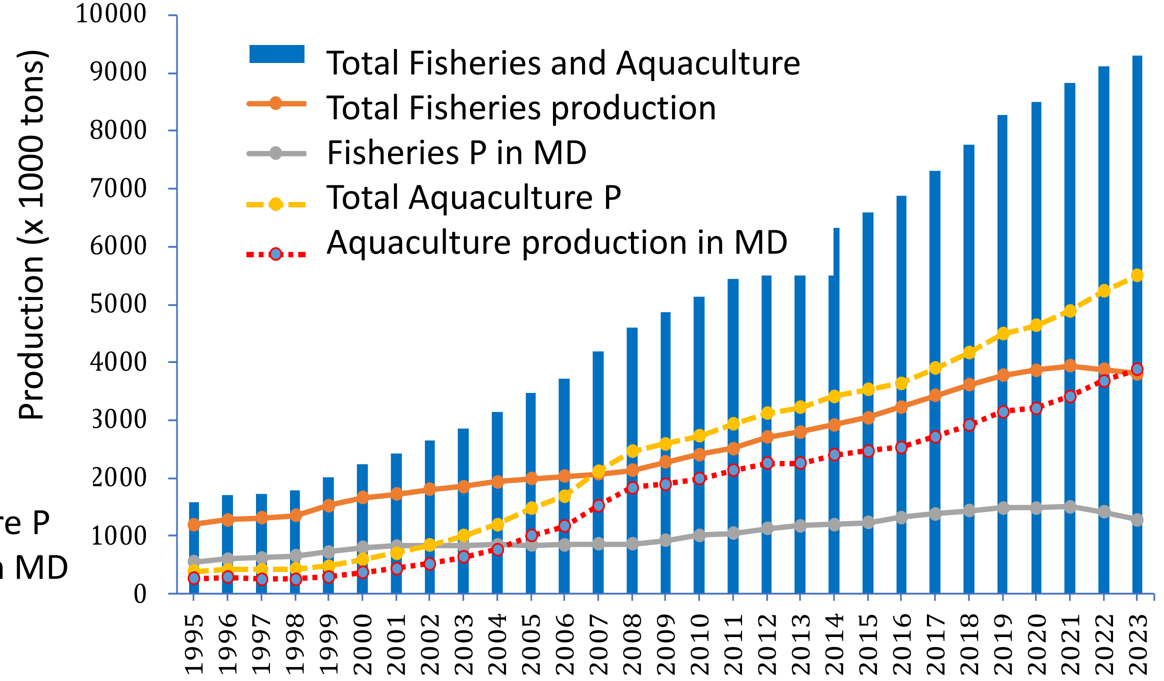
Vietnam aquaculture overview





- Mekong Delta accounts for 72% total aquaculture area

- Aquaculture production of Mekong Delta:
40% fisheries production
72% aquaculture production

Vietnam aquaculture overview

- Aquaculture main species

- **Marine shrimp**
  - Area: 737.000 ha
    - Penaeus monodon: 622.000 ha
    - Whietleg shrimp: 115.000 ha
  - Production: 1.119.000 t
    - Penaeus monodon: 273.700 t
    - Whiteleg shrimp: 845.200 t

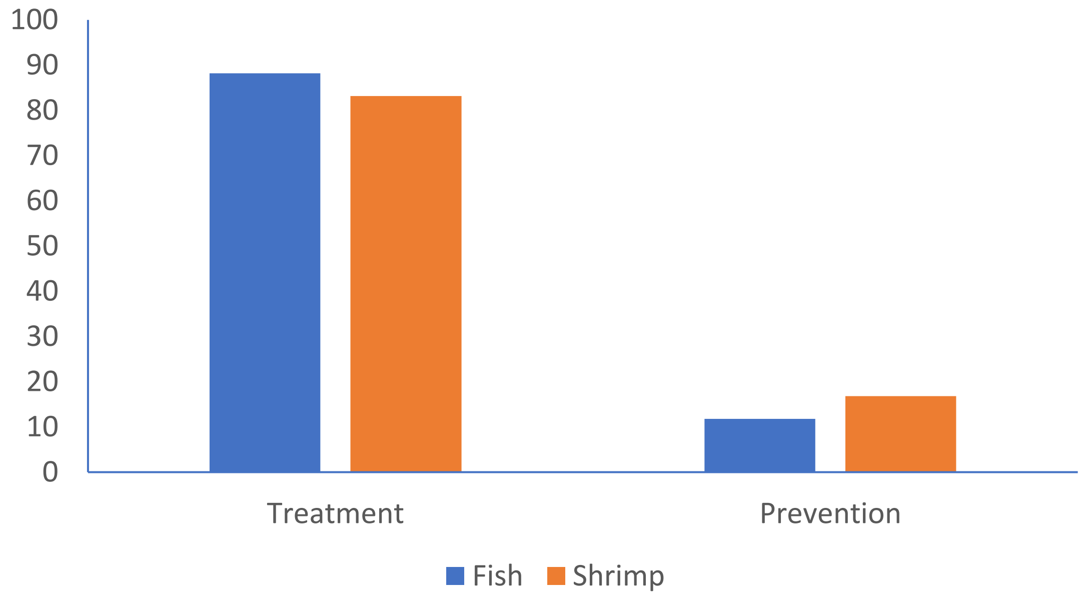
- **Cat fish** — Area: 5.700 ha — Production: 1.710.000 t

- **Marine aquaculture** — Area: 9.500 m3 — Production: 789,800 t

- **Tilapia** — Area: 30.000 ha — Production: 270.000 t

Data in 2023

Antibiotic use in aquaculture in Vietnam



Luu Quynh Huong, et al.,. (2021). Antibiotic use in fish and shrimp farm in Vietnam, Aquaculture report, 20, P1-9

- **83.2% used for treatment, 16,8% used for prevention**
- **64% fish farmer and 24% shrimp farmer used antibiotic in crop**
- **Notifications from imported countries due to antibiotic residue in the seafood products from Vietnam**

Antibiotic use in striped catfish aquaculture

Group	Antibiotic	Farmers used (%) (n=30)		
		An Giang	Đồng Tháp	Cần Thơ
Beta - lactam	Amoxicillin	33,3	66,7	76,7
	Cephalexin	3,33	30,0	0
Quinolone	Enrofloxacin	16,7	3,33	23,3
	Levofloxacin	16,7	10,0	3,33
Tetracycline	Oxytetracycline	0	53,3	0
	Doxycycline	26,7	60,0	53,3
Phenicol	Florfenicol	20,0	26,7	13,3
Co-trimoxazol	Sulfamethoxazole + trimethoprim	16,7	53,3	6,67

To control bacterial disease in the first three months of rearing

No residue of antibiotic due to elimination

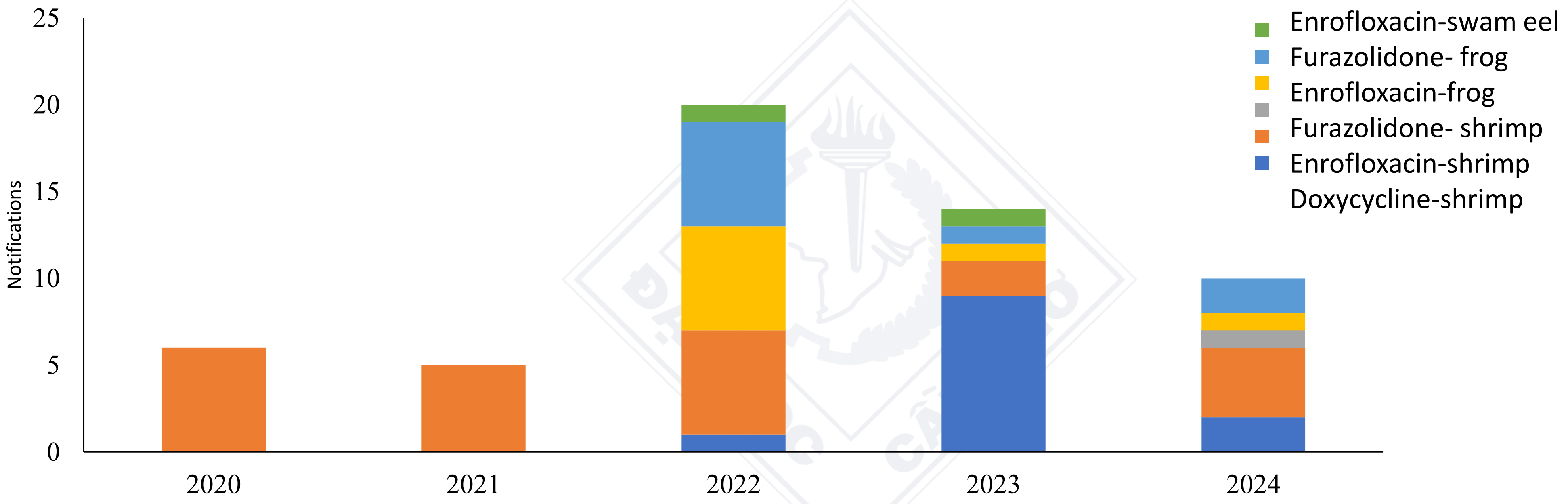
Antibiotic use in shrimp aquaculture

Name	Earthern pond (n=58)	Linned ponds (n=75)
Florfenicol	1,94	3,57
Enrofloxacin	5,81	3,06
Ciprofloxacin	7,74	7,14
Tetracycline	5,81	4,08
Oxytetracycline	9,03	8,67
Doxycycline	2,58	3,06
Sulfamethoxazole và trimethroprim	11,6	8,67
Amoxicillin	9,68	9,18
Cefotaxime	4,52	6,63

To control bacterial disease, Vibrio spp

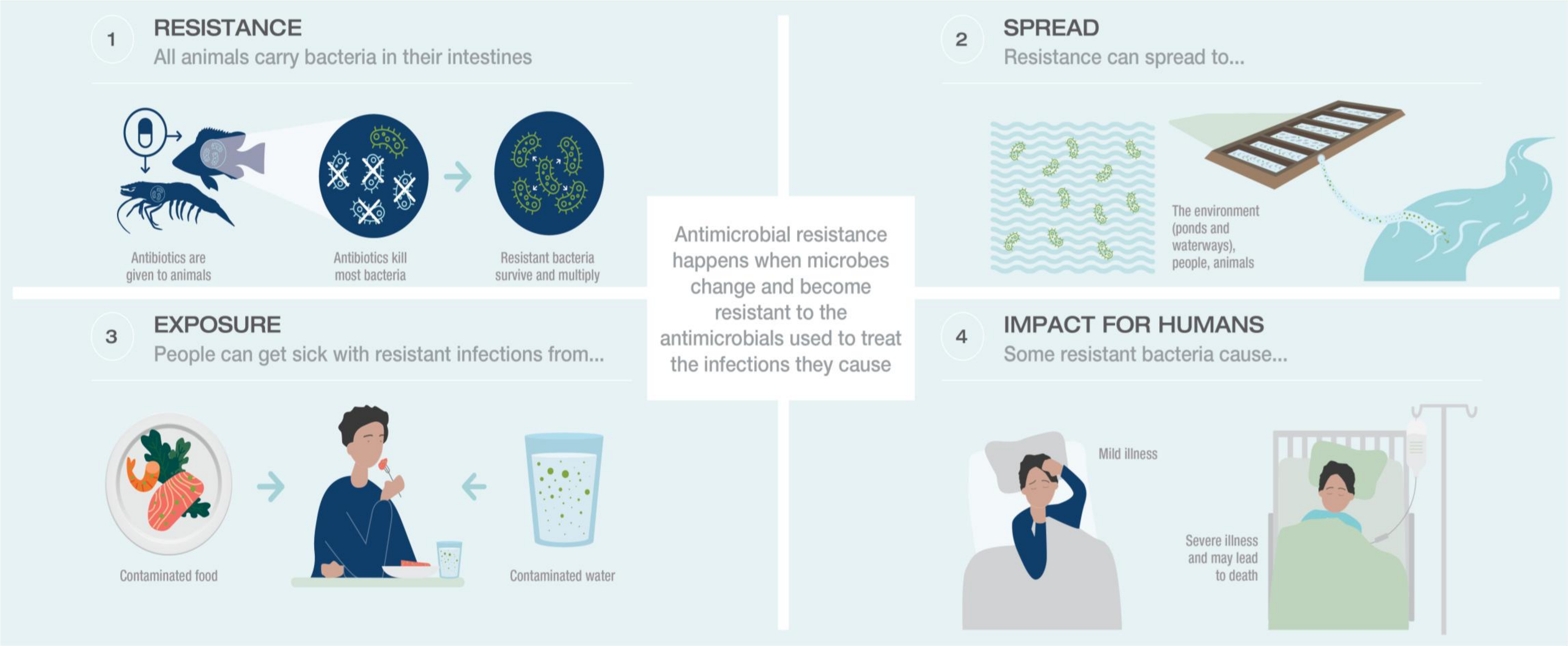
Farmers are aware of using antibiotic due to residues

Warnings from Japan authority

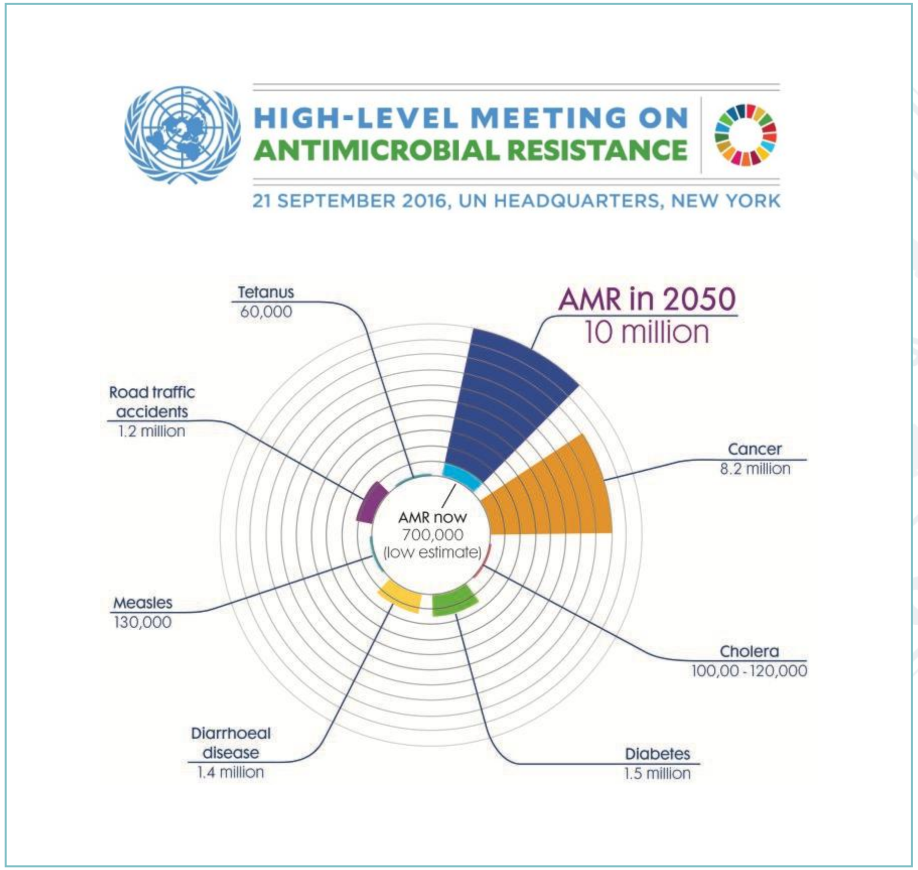


3-amino-2-oxazolidinone (AOZ) is a metabolite of the veterinary drug furazolidone.
https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/kenkou_iryou/shokuhin/yunyu_kanshi/index_00017.html

Antimicrobial resistance



Why we care about antimicrobial resistance



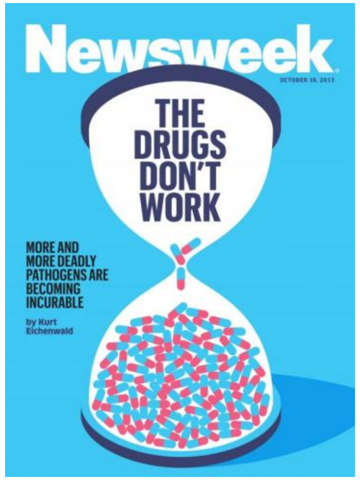
"There are no more excuses for industry and Governments not to act."

Swedish Minister of Health

World Organisation for Animal Health

World Health Organization

"AMR has reached crisis proportions"

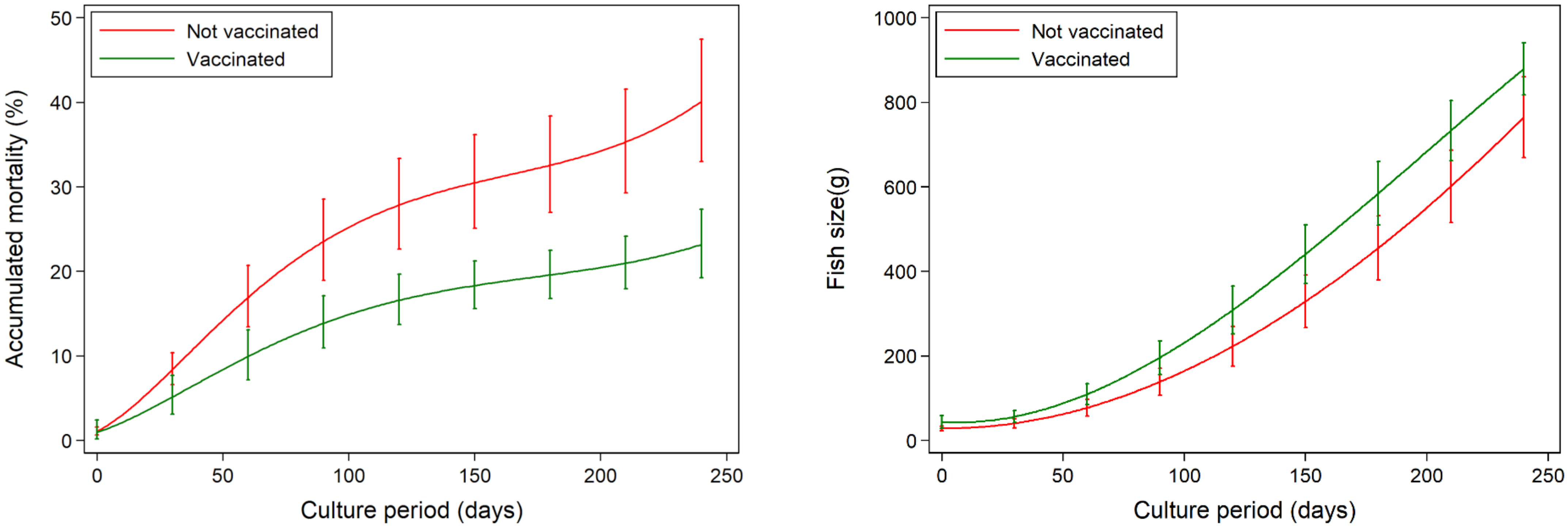


Antibiotic residue control strategy

- Increase checking of antibiotic residue in raw material and final processed products
- Feeding stimulants compounds to enhance shrimp health
- Post-larvae selection program for disease resistance
- Fish vaccination
- Shrimp aquaculture production system
- Aquaculture standards
- ....

Catfish vaccination

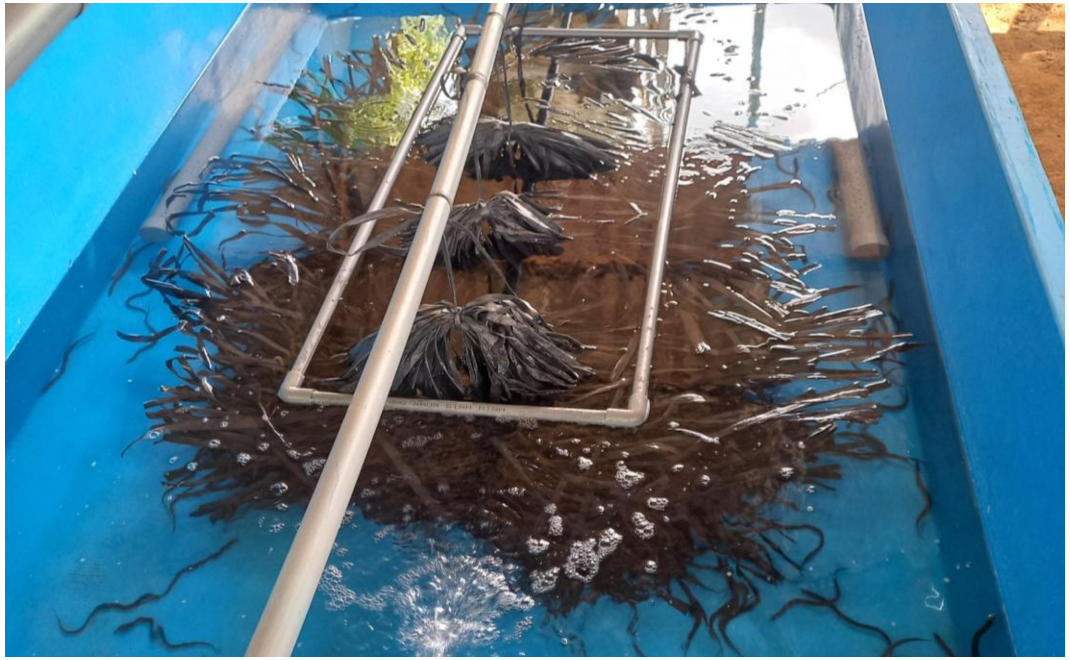
- Vaccination improved fish mortality, growth performance and reduced disease episodes



- Also, reduced antibiotic use from 20.2 mg antibiotic/kg to 7.9 mg/kg of fish

RAS for freshwater fish

CTU built and applied RAS system for freshwater fish e.g. clarias catfish, swam eel, tilapia, Pangasius,…..



RAS for white-leg shrimp

Parameters	Values
Stockign density (shrimp/m^3)	200-300
Rearing period (days)	56 – 84
Shrimp weight (shrimp/kg)	40 – 80
Survival rate (%)	>80
Shrimp biomass (kg/m^3)	3,5 – 4,5
Production (ton/ha/crop)	35 – 45
FCR	1,03 – 1,14
Pumpkin	0,23 – 0,35

Aquaculture standards

BEST AQUACULTURE PRACTICES CERTIFIED

VietGAP

asc Aquaculture Stewardship Council

Naturland

GLOBALG.A.P.

FRIEND OF THE SEA

Marine Stewardship Council
Certified sustainable seafood

WHOLE FOODS MARKET

FAIRTRADE INTERNATIONAL

CÁM ƠN QUÝ VỊ ĐÃ CHÚ Ý THEO DÕI

Thanks for your attention